# **Complete Summary**

#### **GUIDELINE TITLE**

Practice parameters for the surgical treatment of ulcerative colitis.

# **BIBLIOGRAPHIC SOURCE(S)**

Cohen JL, Strong SA, Hyman NH, Buie WD, Dunn GD, Ko CY, Fleshner PR, Stahl TJ, Kim DG, Bastawrous AL, Perry WB, Cataldo PA, Rafferty JF, Ellis CN, Rakinic J, Gregorcyk S, Shellito PC, Kilkenny JW 3rd, Ternent CA, Koltun W, Tjandra JJ, Orsay CP, Whiteford MH, Penzer JR, Standards Practice Task Force American Society of Colon and Rectal Surgeons. Practice parameters for the surgical treatment of ulcerative colitis. Dis Colon Rectum 2005 Nov;48(11):1997-2009. [165 references] <a href="PubMed">PubMed</a>

# **GUIDELINE STATUS**

This is the current release of the guideline.

This guideline updates a previous version: Wexner SD, Rosen L, Lowry A, Roberts PL, Burnstein M, Hicks T, Kerner B, Oliver GC, Robertson HD, Robertson WG, Ross TM, Senatore PJ, Simmang C, Smith C, Vernava AM, Wong WD. Practice parameters for the treatment of mucosal ulcerative colitis--supporting documentation. Standards Practice Task Force. American Society of Colon and Rectal Surgeons. Dis Colon Rectum 1997 Nov;40(11):1277-85.

# \*\* REGULATORY ALERT \*\*

# FDA WARNING/REGULATORY ALERT

**Note from the National Guideline Clearinghouse (NGC)**: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

July 08, 2008, Fluoroquinolones (ciprofloxacin, norfloxacin, ofloxacin, levofloxacin, moxifloxacin, gemifloxacin): A BOXED WARNING and Medication Guide are to be added to the prescribing information to strengthen existing warnings about the increased risk of developing tendinitis and tendon rupture in patients taking fluoroquinolones for systemic use.

# **COMPLETE SUMMARY CONTENT**

\*\* REGULATORY ALERT \*\*
SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
RECOMMENDATIONS

EVIDENCE SUPPORTING THE RECOMMENDATIONS
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
CONTRAINDICATIONS
QUALIFYING STATEMENTS
IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT
CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY
DISCLAIMER

# SCOPE

# **DISEASE/CONDITION(S)**

- Ulcerative colitis
- Colorectal cancer associated with ulcerative colitis

# **GUIDELINE CATEGORY**

Prevention Treatment

#### **CLINICAL SPECIALTY**

Colon and Rectal Surgery Internal Medicine Oncology

# **INTENDED USERS**

Health Care Providers Patients Physicians

# **GUIDELINE OBJECTIVE(S)**

To provide practice parameters for the surgical treatment of ulcerative colitis

# **TARGET POPULATION**

Patients with ulcerative colitis

### INTERVENTIONS AND PRACTICES CONSIDERED

- 1. Emergency interventions
  - Emergency colectomy: Total or subtotal abdominal colectomy with end ileostomy and either a Hartmann's closure of the distal bowel or creation of a mucous fistula
  - Histopathological examination of the resected colon specimen
- 2. Elective surgical options

- Total proctocolectomy with ileostomy
- Restorative proctocolectomy with ileal pouch-anal anastomosis (IPAA)
  - Mucosectomy and double-stapled approaches
  - Pouch configurations
  - Omission of diverting loop ileostomy in selected patients
  - Routine surveillance of ileal pouches for dysplasia in the ileal mucosa (considered but not recommended)
  - Management of pouchitis with antibiotics
- Continent ileostomy
- Total abdominal colectomy with ileoproctostomy
- 3. Cancer prevention
  - Endoscopic surveillance for patients with longstanding ulcerative colitis
  - Total proctocolectomy for patients with dysplasia
  - 5-aminosalicylate (ASA)
  - Stricture resection

# **MAJOR OUTCOMES CONSIDERED**

- Safety and efficacy of surgeries
- · Post-operative morbidity, mortality, functionality, and quality of life
- Risk of cancer or dysplasia
- Complications of surgical therapy

#### **METHODOLOGY**

# METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

# **DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE**

An organized search of Medline, PubMed, and the Cochrane Database of Collected Reviews was performed through September 2004. Key-word combinations included ulcerative colitis, ileal pouch-anal anastomosis, ileostomy, colorectal neoplasm, surgery, ileoproctostomy, and related articles. Directed searches of the embedded references from the primary articles also were accomplished.

# **NUMBER OF SOURCE DOCUMENTS**

Not stated

# METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

# RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

#### **Levels of Evidence**

- I. Meta-analysis of multiple well-designed, controlled studies; randomized trials with low false-positive and low false-negative errors (high power)
- II. At least one well-designed experimental study; randomized trials with high false-positive or high false-negative errors or both (low power)
- III. Well-designed, quasi-experimental studies, such as nonrandomized, controlled, single-group, preoperative-postoperative comparison, cohort, time, or matched case-control series
- IV. Well-designed, nonexperimental studies, such as comparative and correlational descriptive and case studies
- V. Case reports and clinical examples

# METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses Systematic Review

#### **DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE**

Not stated

#### METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

#### RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

#### **Grades of Recommendations**

- A. Evidence of Type I or consistent findings from multiple studies of Type II, III, or IV
- B. Evidence of Type II, III, or IV and generally consistent findings
- C. Evidence of Type II, III, or IV but inconsistent findings
- D. Little or no systematic empirical evidence

# **COST ANALYSIS**

A formal cost analysis was not performed and published cost analyses were not reviewed.

# **METHOD OF GUIDELINE VALIDATION**

Not stated

# **DESCRIPTION OF METHOD OF GUIDELINE VALIDATION**

Not stated

# **RECOMMENDATIONS**

# **MAJOR RECOMMENDATIONS**

The levels of evidence (I-V) and the grades of recommendations (A-D) are defined at the end of the "Major Recommendations" field.

# **Indications for Surgery**

Acute Colitis

 Patients with clinical evidence of actual or impending perforation should undergo urgent surgery. Level of Evidence: III; Grade of Recommendation: A

The diagnosis of severe colitis is based on the criteria of Truelove and Witts and is defined as colitis with more than six bloody stools per day, fever (temperature, >37.5 degrees Celsius [C]), tachycardia (heart rate, >90 beats per minute), anemia (hemoglobin, <75 percent of normal), and elevated sedimentation rate (ESR, >30 mm per hour). Alternatively, toxic, or fulminant, colitis is characterized by more than ten bloody stools per day, fever (temperature, >37.5 degrees C), tachycardia (heart rate, >90 beats per minute), anemia (transfusion required), elevated sedimentation rate (ESR, >30 mm per hour), colonic dilation on radiography, and abdominal distention with tenderness. When the colonic distention of the transverse colon exceeds 6 cm, the diagnosis becomes toxic megacolon. Surgery is required in 20 to 30 percent of patients with toxic colitis.

Patients with toxic colitis receiving surgical intervention before perforation have a significantly better outcome than those operated on after perforation. However, there are few "hard" signs of impending perforation in patients with toxic colitis. Perforation can occur without dilation and these patients often do not exhibit classic signs of peritonitis. Persistent or increasing colonic dilation, pneumatosis coli, worsening local peritonitis, and the development of multiple organ failure can be signs of impending or actual perforation. Localized peritonitis may reflect only local inflammation or may be a sign of impending perforation.

Patients whose condition worsens on medical therapy or who fail to make significant improvement after a period of 48 to 96 hours of appropriate medical therapy should be considered for surgery. **Level of Evidence: III; Grade of Recommendation: B** 

Limited evidence suggests that intravenous cyclosporine is more effective than standard steroid-based treatment for severe colitis and has been advocated as a second-line agent before colectomy. The need for and timing of surgery in patients whose condition seems to "plateau" after a period of initial improvement often is difficult to judge. However, patients with more than eight stools per day or three to eight stools and a C-reactive protein > 45 mg/mL after three days of therapy have an 85 percent chance of requiring colectomy during the same hospitalization, regardless of whether corticosteroid or cyclosporine treatment is used. Furthermore, persistent colonic distention seems to characterize a subgroup of patients who respond poorly to medical therapy and are at increased risk for the development of megacolon. Prolonged observation of these patients may risk exhaustion of

their physiologic reserve but does not necessarily increase perioperative morbidity.

# Intractability

1. Surgery is indicated in ulcerative colitis when medical therapy is ineffective. **Level of Evidence: III; Grade of Recommendation: B** 

Intractability is one of the most common surgical indications for ulcerative colitis. Medical therapy can fail for several reasons. Symptoms may be insufficiently controlled despite an intensive medical regimen and the patient is unable to achieve an acceptable quality of life. Alternatively, the response to treatment may be adequate, but the risks of chronic medical therapy (especially long-term corticosteroids) may be excessive. Patients also may be unable to tolerate the deleterious side effects of medical therapy. Patients who are noncompliant with treatment regimens might be candidates for surgical management.

The postoperative quality of life for patients with ulcerative colitis is improved after colectomy.

Growth failure in children is another form of intractability that may require colectomy. Surgery should be considered if growth failure persists despite maximal nutritional and medical therapy. Substantial disability from colectomy-responsive extraintestinal manifestations also may prompt resection.

# Cancer Risk

1. Patients with long-standing ulcerative colitis should undergo endoscopic surveillance. Level of Evidence: IV; Grade of Recommendation: B

Although it is clear that patients with longstanding ulcerative colitis have an increased risk of colorectal cancer, its magnitude has been difficult to estimate. Patients with extensive colitis (microscopic disease proximal to the splenic flexure) should be advised to undergo a screening endoscopy after eight years of disease symptoms and should have a surveillance colonoscopy performed every one to two years. If a person suffers from left-sided disease (i.e., microscopic disease distal to the splenic flexure yet proximal to the rectum), he or she may begin the same surveillance program after 15 years of disease symptoms despite a lack of direct supporting evidence for this duration-dependent stratification. Surveillance colonoscopies should be ideally performed when the disease is in remission to minimize confusion regarding neoplasia. Because it is necessary to take at least 33 biopsies from the colon and rectum to achieve 90 percent sensitivity, it is reasonable to obtain four quadrant random biopsies at 10-cm intervals along the large intestine, taking particular care to biopsy any strictures or mass-like lesions while avoiding any nonsuspicious pseudopolyps. Polyps that appear potentially dysplastic can be removed by polypectomy, and the adjacent flat mucosa also should be biopsied to exclude dysplasia.

Several studies indicate patients with concomitant primary sclerosing cholangitis (PSC) are at a higher risk of colorectal neoplasia. Patients with PSC often have quiescent colitis, so it is difficult estimating the precise onset of disease in this subgroup. It is recommended that such patients should undergo annual surveillance colonoscopy.

 Total proctocolectomy is recommended for patients with carcinoma, nonadenoma-like dysplasia-associated lesion or mass (DALM), high-grade dysplasia, and low-grade dysplasia in a stricture that is symptomatic or impassable during colonoscopy. The diagnosis of dysplasia should ideally be confirmed by two independent expert gastrointestinal histopathologists. Level of Evidence: III; Grade of Recommendation: C

Patients should be encouraged to take prescribed 5-aminosalicylate (ASA) medication, because recent literature suggests that regular consumption of 5-ASA compounds may reduce their colorectal cancer risk.

3. Patients with ulcerative colitis who develop a stricture, especially with longstanding disease, should undergo resection. **Level of Evidence: III, Grade of Recommendation: A** 

Although the majority of strictures are benign, as many as 25 percent will be malignant, and malignant strictures account for up to 30 percent of cancers occurring in ulcerative colitis patients. Strictures that arise on a background of long-standing disease, originate proximal to the splenic flexure, or cause obstructive symptoms are more likely to be malignant. Endoscopic biopsy of strictures can reveal dysplasia or malignancy but may be unreliable because of sampling error and the more infiltrating nature of colitis-associated malignancies.

# **Surgical Options**

# Emergency

 The most appropriate operative procedure for emergency surgery in ulcerative colitis is total or subtotal abdominal colectomy with end ileostomy. Level of Evidence: III, Grade of Recommendation: B

Subtotal colectomy with end ileostomy and Hartmann's closure of the distal bowel or creation of a mucous fistula is a safe and effective approach. This procedure removes the majority of the inflamed bowel with a comparatively straightforward operation and avoids pelvic dissection as well as an intestinal anastomosis. Compared with intraperitoneal closure of the rectal stump, extrafascial placement of a closed rectosigmoid stump may be associated with fewer pelvic septic complications and facilitates subsequent pelvic dissection. Transanal drainage of the distal stump may further decrease the risk of pelvic sepsis.

The resected colon specimen should be histopathologically examined for confirmation of ulcerative colitis or Crohn's disease because the likelihood of an altered diagnosis is appreciable after colectomy. In patients with ulcerative

colitis, a completion proctectomy and ileal pouch-anal anastomosis (IPAA) often can be safely performed at a later date to remove the remaining disease and restore intestinal continuity. If the diagnosis is Crohn's disease and the rectum is reasonably compliant and distensible, consideration may be given to an ileorectal anastomosis.

# Elective Surgery

 Total proctocolectomy with ileostomy is an appropriate surgical alternative for patients with ulcerative colitis. Level of Evidence: III; Grade of Recommendation: B

Proctocolectomy with ileostomy has been the conventional operative approach for patients with ulcerative colitis and may be considered a benchmark procedure to which all other operations are compared. It has been established as a safe, curative operation that permits most patients to live a full, active lifestyle.

The operation, however, does have recognized complications. Although stoma-associated problems, such as prolapse, are probably most frequent, other complications that are common to any abdominal/pelvic procedure also have been recognized. These include small-bowel obstruction, infection/fistula, persistent pain, unhealed perineal wound, sexual and bladder dysfunction, and infertility.

2. Total proctocolectomy with ileal pouch-anal anastomosis (IPAA) is an appropriate operation for most patients with ulcerative colitis. **Level of Evidence: III; Grade of Recommendation: A** 

Total proctocolectomy with IPAA has become the most commonly performed procedure for patients with ulcerative colitis requiring elective surgery. The operation is relatively safe and durable, associated with an acceptable morbidity rate (19 to 27 percent), an extremely low mortality rate (0.2–0.4 percent), and a quality of life that approaches that of the normal population. The complications of the procedure include those of any major abdominal operation: risks arising from the pelvic dissection, such as infertility or sexual dysfunction, and pouch-specific complications, such as pouchitis.

 Total proctocolectomy with IPAA may be appropriately offered to selected ulcerative colitis patients with concomitant colorectal cancer.
 Level of Evidence: IV; Grade of Recommendation: C

A more conservative management approach has been advocated by some who recommend an abdominal colectomy with ileostomy followed by a restorative proctectomy after an observation period of at least 12 months to better assure that no recurrent disease develops.

 Total proctocolectomy with IPAA may be appropriately offered to selected elderly patients with ulcerative colitis. Level of Evidence: III; Grade of Recommendation: C Chronologic age should not itself be used as an exclusion criterion. However, careful consideration should be given to other comorbidities, as well as the patient's mental status and anal sphincter function.

 Mucosectomy and double-stapled procedures are both appropriate techniques in most circumstances. Level of Evidence: II; Grade of Recommendation: A

It is important that the surgeon performing an IPAA be familiar with both techniques in the event of failure or inability to use a surgical stapler or when a handsewn anastomosis is contemplated but anastomotic tension is excessive. Patients should be followed in a surveillance program with biopsies of the retained columnar mucosa performed at least every two years beginning eight to ten years after the onset of their initial disease symptoms.

- Pouch configuration may be chosen based on individual preference.
   Level of Evidence: II; Grade of Recommendation: B
- A diverting loop ileostomy may be reasonably omitted in some patients. Level of Evidence: III; Grade of Recommendation: B

Retrospective and prospective trials suggest that one-stage restorative proctocolectomy can be safely performed in selected patients by experienced surgeons. The one-stage procedure is associated with a more challenging early recovery, as well as a slightly increased rate of anastomotic disruption and pelvic sepsis. Although some disagree, these complications should usually be managed with fecal diversion because of concerns about compromised functional outcome and resultant pouch loss. In general, selective omission of the ileostomy may be considered safe when the anastomosis appears intact, is under no tension, the procedure is not complicated by excessive bleeding or other technical difficulties, and the patient is not on high doses of corticosteroids before surgery.

- Routine surveillance of ileal pouches for dysplasia in the ileal mucosa is not warranted. Level of Evidence: III; Grade of Recommendation: B
- Pouchitis is common after IPAA and readily managed with antibiotics in most circumstances. Level of Evidence: II; Grade of Recommendation: A

Presenting symptoms usually include abdominal cramps, fever, pelvic pain, and an increase in stool frequency. Clinical diagnosis may require confirmation by endoscopy and pouch mucosal biopsy, because clinical symptoms alone can be misleading. However, it seems that histologic evaluation may be omitted without compromising diagnostic accuracy. Treatment of pouchitis relies primarily on antibiotics, such as metronidazole and ciprofloxacin. Probiotics have been used successfully in pouch patients to provide prophylaxis against pouchitis and to maintain remission in chronic pouchitis. In antibiotic refractory cases, budesonide enemas or other medical treatments may be useful. Patients suffering with chronic pouchitis should be assessed for a

diagnosis of Crohn's disease. Uncommonly, an ileostomy with or without pouch excision is required for severe refractory pouchitis.

 Continent ileostomy is an alternative surgical option for patients with ulcerative colitis who are not eligible for or have had a failed restorative proctocolectomy. Level of Evidence: III; Grade of Recommendation: B

The present role of the continent ileostomy is primarily confined to patients with poor sphincter function, a failed IPAA, or those who are dissatisfied with a conventional Brooke ileostomy. This reduced role is the result of the success of the IPAA and the high rate of early and late complications associated with the continent ileostomy.

4. Total abdominal colectomy with ileoproctostomy is an acceptable surgical approach in a highly selected group of patients with ulcerative colitis. **Level of Evidence: III; Grade of Recommendation: B** 

Whereas the benefits of total abdominal colectomy with ileoproctostomy are its relative simplicity and predictability compared with IPAA, the disadvantages are related to the long-term durability of the procedure.

# **Definitions**:

# **Levels of Evidence**

- I. Meta-analysis of multiple well-designed, controlled studies; randomized trials with low false-positive and low false-negative errors (high power)
- II. At least one well-designed experimental study; randomized trials with high false-positive or high false-negative errors or both (low power)
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- V. Case reports and clinical examples

#### **Grades of Recommendations**

- A. Evidence of Type I or consistent findings from multiple studies of Type II, III, or IV
- B. Evidence of Type II, III, or IV and generally consistent findings
- C. Evidence of Type II, III, or IV but inconsistent findings
- D. Little or no systematic empirical evidence

# **CLINICAL ALGORITHM(S)**

None provided

# **EVIDENCE SUPPORTING THE RECOMMENDATIONS**

# TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations" field).

# BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

#### **POTENTIAL BENEFITS**

Appropriate treatment and management of patients with ulcerative colitis

#### **POTENTIAL HARMS**

# **Complications of Surgical Therapy**

- Total proctocolectomy with ileostomy: Stoma-associated problems, such as prolapse, are most frequent; other complications that are common to any abdominal/pelvic procedure also have been recognized. These include small-bowel obstruction, infection/fistula, persistent pain, unhealed perineal wound, sexual and bladder dysfunction, and infertility.
- Total abdominal colectomy with ileoproctostomy: Disadvantages are related to the long-term durability of the procedure. Studies demonstrate a 12% to 50 % failure rate with follow-up of more than six years. In addition, the theoretical risk for of developing cancer in the remaining rectum should be considered.
- Continent ileostomy: Early complications are seen in approximately onequarter of patients, most commonly sepsis (secondary to suture line leaks, fistulas, and stomal necrosis) and obstruction. Late complications occur in up to 50 percent of patients and include incontinence and obstruction secondary to disruption or dysfunction of the valve; valve revision is required in up to 60 percent of patients. Although valve prolapse has been reduced with stapling techniques, the overall pouch failure rate has not decreased.
- Total proctocolectomy with ileal pouch-anal anastomosis (IPAA): Complications include risks arising from the pelvic dissection such as infertility or sexual dysfunction and pouch-specific complications, such as pouchitis.
- One-stage restorative proctocolectomy: The one-stage procedure is associated with a more challenging early recovery, as well as a slightly increased rate of anastomotic disruption and pelvic sepsis.
- Risks of *ileostomy closure* include anastomotic leaks from the closure site and an increased incidence of postoperative small-bowel obstruction that often mandates hospitalization or laparotomy.

# **CONTRAINDICATIONS**

# **CONTRAINDICATIONS**

- **Ileal pouch-anal anastomosis (IPAA)** is contraindicated in patients with metastatic disease and those with invasive carcinomas of the mid or low rectum.
- **Total abdominal colectomy with ileoproctostomy** is contraindicated in patients with severe rectal inflammation or a marked decrease in rectal distensibility, severe anoperineal disease, and colonic dysplasia or carcinoma in a potentially curative situation.

# **QUALIFYING STATEMENTS**

# **QUALIFYING STATEMENTS**

These guidelines are inclusive and not prescriptive. Their purpose is to provide information on which decisions can be made, rather than dictate a specific form of treatment. It should be recognized that these guidelines should not be deemed inclusive of all proper methods of care or exclusive of methods of care reasonably directed to obtaining the same results. The ultimate judgment regarding the propriety of any specific procedure must be made by the physician in light of all of the circumstances presented by the individual patient.

# **IMPLEMENTATION OF THE GUIDELINE**

#### **DESCRIPTION OF IMPLEMENTATION STRATEGY**

An implementation strategy was not provided.

# INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

# **IOM CARE NEED**

Getting Better Living with Illness Staying Healthy

# **IOM DOMAIN**

Effectiveness

# **IDENTIFYING INFORMATION AND AVAILABILITY**

# **BIBLIOGRAPHIC SOURCE(S)**

Cohen JL, Strong SA, Hyman NH, Buie WD, Dunn GD, Ko CY, Fleshner PR, Stahl TJ, Kim DG, Bastawrous AL, Perry WB, Cataldo PA, Rafferty JF, Ellis CN, Rakinic J, Gregorcyk S, Shellito PC, Kilkenny JW 3rd, Ternent CA, Koltun W, Tjandra JJ, Orsay CP, Whiteford MH, Penzer JR, Standards Practice Task Force American Society of Colon and Rectal Surgeons. Practice parameters for the surgical

treatment of ulcerative colitis. Dis Colon Rectum 2005 Nov;48(11):1997-2009. [165 references] PubMed

# **ADAPTATION**

Not applicable: Guideline was not adapted from another source.

#### **DATE RELEASED**

1997 (revised 2005 Nov)

# **GUIDELINE DEVELOPER(S)**

American Society of Colon and Rectal Surgeons - Medical Specialty Society

# **SOURCE(S) OF FUNDING**

Not stated

# **GUIDELINE COMMITTEE**

Standards Practice Task Force of the American Society of Colon and Rectal Surgeons

# **COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE**

Standards Practice Task Force of the American Society of Colon and Rectal Surgeons (ASCRS): Jeffrey L. Cohen, MD; Scott A. Strong, MD; Neil H. Hyman, MD; W. Donald Buie, MD; Gary D. Dunn, MD; Clifford Y. Ko, MD; Phillip R. Fleshner, MD; Thomas J. Stahl, MD; Donald G. Kim, MD; Amir L. Bastawrous, MD; W. Brian Perry, MD; Peter A. Cataldo, MD; Janice F. Rafferty, MD; C. Neal Ellis, MD; Jan Rakinic, MD; Sharon Gregorcyk, MD; Paul C. Shellito, MD; John W. Kilkenny III, MD; Charles A. Ternent, MD; Walter Koltun, MD; Joe J. Tjandra, MD; Charles P. Orsay, MD; Mark H. Whiteford, MD; Jason R. Penzer, MD

# FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

# **GUIDELINE STATUS**

This is the current release of the guideline.

This guideline updates a previous version: Wexner SD, Rosen L, Lowry A, Roberts PL, Burnstein M, Hicks T, Kerner B, Oliver GC, Robertson HD, Robertson WG, Ross TM, Senatore PJ, Simmang C, Smith C, Vernava AM, Wong WD. Practice parameters for the treatment of mucosal ulcerative colitis--supporting documentation. Standards Practice Task Force. American Society of Colon and Rectal Surgeons. Dis Colon Rectum 1997 Nov;40(11):1277-85.

# **GUIDELINE AVAILABILITY**

Electronic copies: Available in Portable Document Format (PDF) from the American Society of Colon and Rectal Surgeons (ASCRS) Web site.

Print copies: Available from the ASCRS, 85 W. Algonquin Road, Suite 550, Arlington Heights, Illinois 60005.

# **AVAILABILITY OF COMPANION DOCUMENTS**

None available

#### **PATIENT RESOURCES**

None available

#### **NGC STATUS**

This summary was completed by ECRI on February 15, 2000. The information was verified by the guideline developer as November 7, 2000. This NGC summary was updated by ECRI Institute on May 31, 2007. This summary was updated by ECRI Institute on July 28, 2008 following the U.S. Food and Drug Administration advisory on fluoroquinolone antimicrobial drugs.

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